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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/634,276	08/05/2003	Andreas Fath	071308.0463	7127

31625 7590 07/11/2007  
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PATENT DEPARTMENT  
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AUSTIN, TX 78701-4039

EXAMINER
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KIM, CHRISTOPHER S

ART UNIT	PAPER NUMBER
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3752

MAIL DATE	DELIVERY MODE
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07/11/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/634,276

Applicant(s)

FATH ET AL.

Examiner

Christopher S. Kim

Art Unit

3752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 May 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3,6 and 8-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,6 and 8-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Amendment***

1. The reply filed on May 1, 2007 is acknowledged.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. The amendment to paragraph 24 filed on May 1, 2007 does not accurately reflect the changes made to previous version of paragraph 24 which was amended on June 23, 2006. Future amendments that do not accurately reflect changes will be held non-responsive.

### ***Claim Rejections - 35 USC § 112***

4. Claims 1 and 3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites "a conical nozzle needle tip" in line 9 which appears to be a double inclusion of the "conical nozzle needle tip" recited in line 7.

Note, for applicant's benefit, claim 3 is rejected under this heading because it depends on claim 1. No particular errors are pointed out but claim 3 inherently includes the same indefiniteness as claim 1 by its dependence on claim 1.

### ***Claim Rejections - 35 USC § 102***

Art Unit: 3752

5. Claims 1, 3, 6, 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Pataki et al. (5,899,389).

Pataki discloses a fuel injection valve comprising:

a nozzle body 108 having a nozzle body seat (seating surface for needle 104); and

a nozzle needle 104 incorporating a nozzle shaft (portion of needle 104 with diameter  $d_1$ ) and a nozzle needle seat (conical tip of needle 104), wherein the nozzle needle seat (conical tip of needle 104) comprises a sealing edge (downstream edge of surface 116) provided between an outer surface of a conical nozzle needle tip and a frusto-conical body section 116 of the nozzle needle;

a gap (gap between the body 108 and needle 104 in the section of the needle between surfaces 114 and 116)

6. Claims 6, 8-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Ushimura (4,470,548).

Ushimura discloses a fuel injection valve comprising: a nozzle body 14; a nozzle needle 12; conical nozzle needle tip 40; frusto-conical body section 36.

In claim 6, the recitation "such that the gap is operable to hydraulically dampen movement of the nozzle needle seat toward the nozzle body seat" merely requires the ability/capability to operate in such a manner. The device of Ushimura has the capability to operate in such a manner because the gap of Ushimura traps/contains part of the fuel flow.

Art Unit: 3752

7. Claims 6, 8-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Holzgreffe (4,982,901).

Holzgreffe discloses a fuel injection valve comprising: a nozzle body 15; a nozzle needle 6; conical nozzle needle tip 21; frusto-conical body section 20.

In claim 6, the recitation "such that the gap is operable to hydraulically dampen movement of the nozzle needle seat toward the nozzle body seat" merely requires the ability/capability to operate in such a manner. The device of Holzgreffe has the capability to operate in such a manner because the gap of Holzgreffe traps/contains part of the fuel flow.

8. Claims 6, 8-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Holzgreffe et al. (5,012,981).

Holzgreffe discloses a fuel injection valve comprising: a nozzle body 15; a nozzle needle 6; conical nozzle needle tip 21; frusto-conical body section 20.

In claim 6, the recitation "such that the gap is operable to hydraulically dampen movement of the nozzle needle seat toward the nozzle body seat" merely requires the ability/capability to operate in such a manner. The device of Holzgreffe has the capability to operate in such a manner because the gap of Holzgreffe traps/contains part of the fuel flow.

### ***Response to Arguments***

9. Applicant's arguments filed May 1, 2007 have been fully considered but they are not persuasive.

Applicant stated that the Office action fails to allege how the prior art discloses the following limitation of claim 1,

the outer surface of the conical nozzle tip provided directly adjacent the frusto-conical body section of the nozzle needle wherein the outer surfaces of a conical nozzle needle tip and of the frusto-conical body section of the nozzle needle each have an included angle, the included angle of the conical needle tip having an included angle essentially the same as the included angle of the frusto-conical body section of the nozzle needle.

First, applicant's cylindrical section 16 intervenes between conical nozzle tip 10 and frusto-conical body section 24. Therefore, the term "directly adjacent" does not preclude intervening structures as used by applicant. Second, "essentially the same" and "essentially parallel" have been interpreted as requiring nothing more than approximately the same and approximately parallel, respectively. It has not been interpreted as requiring exactly the same or parallel.

On such basis, Pataki discloses an outer surface of a conical nozzle tip (conical surface of valve element 104 including the conical tip of valve element 102) provided directly adjacent the frusto conical body section 114 of the nozzle needle 104, wherein the outer surfaces of the conical nozzle needle tip and of the frusto-conical body section 114 of the nozzle needle 104 each have an included angle, the included angle of the conical needle tip having an included angle essentially the same as the included angle of the frusto-conical body section 114 of the nozzle needle 104. The surface 116 and 114 are shown in figure 4a as being essentially (approximately) parallel. Therefore, they are of the same angle relative to the horizontal or vertical.

Second reading of Pataki provides that Pataki discloses an outer surface of a conical nozzle tip (conical tip of valve element 102) provided directly adjacent the frusto conical body section 116 of the nozzle needle 104, wherein the outer surfaces of the conical nozzle needle tip and of the frusto-conical body section 116 of the nozzle needle 104 each have an included angle, the included angle of the conical needle tip having an included angle essentially the same as the included angle of the frusto-conical body section 116 of the nozzle needle 104. The surface 116 and the conical tip of valve element 102 are along the same line of the valve seat of valve body 108. Pataki further discloses a gap (gap between 118 and 116).

Regarding Ushimura and Holzgreffe, the conical nozzle needle tip and the frusto-conical body section have been explicitly identified in the prior Office action and above. The gap in each reference is defined by the space between the frusto-conical body section of the nozzle needle and the nozzle body.

Regarding applicant's argument that the prior art does not explicitly or inherently disclose that the gap is operable to hydraulically dampen the movement of the nozzle needle, the recitation merely requires the ability to so perform and does not constitute a positively recited limitation. Even so, the pressure acting on the gap surface would inherently provide a dampening function.

### ***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

Art Unit: 3752

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

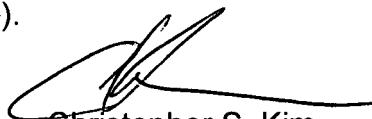
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher S. Kim whose telephone number is (571) 272-4905. The examiner can normally be reached on Monday - Friday, 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Shaver can be reached on (571) 272-4720. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



Art Unit: 3752

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Christopher S. Kim  
Primary Examiner  
Art Unit 3752

CK